Weekly Report

May 20th, 2018

Done:

1. Found so many issues in the fire data, have to fix them manually. Also, discover a fire descriptive dataset on Kaggle, more organized and clean.
2. Finish the CNN course. In the next three weeks, will take the RNN course, and then finish the entire deeplearning.ai series.
   There are many interesting aspects in CNN, like how to do a 1-dimensional CNN, the way to do face recognition, and those object detection/localization. These methods are inspiring, although sometimes very heuristic. Many applications in our daily life: those image/video editing apps on smart phones, auto-driving, etc. There are also some papers on visualizing CNNs, which I would look later (like visualizing and understanding conv networks, understanding neural networks through deep visualization).
3. Second session on writing workshop: how to write introduction. Senthil first presented the mistakes we did our related work assignments: (1) be more specific, summarize the paper, not talk about; (2) avoid using Wikipedia; (3) check the usage of articles.
   He also recommended several articles on how to read papers:
   > How to read a scientific paper (Adam Ruben, 2016)
   > How to (seriously) read a scientific paper (Elizabeth Pain, 2016)
   > How to Review HCI/Visualization Papers (Elmqvist, 2015)

   About writing introduction, useful suggestions on structuring and drawing readers' attentions are provided. After the workshop is done, I will share them with VAG (secretly, since it is not allowed to be made public online).
4. Had a brief talk with Prof. Ma. The idea is vague, and he also thought more tries are needed before we decide to do this story telling stuff.

To Do:

1. Prepare some draft design of my ideas on storytelling.
2. Try manually fixing the dirty data or test other schemes to correlate fire data.

Paper reading:

1. VIS17 *Data Visualization Saliency Model: A Tool for Evaluating Abstract Data Visualizations* 对于可视化作品中哪些地方更容易引起读者注意的研究，建立一个模型. 之前一些 visual saliency 模型都不适用于抽象数据的可视化，所以作者们想着在上面迭代改进，提出一个模型，糅合了两种子模型：关于图像和文字，并做了一系列评估. 最后作者得出的结论是，在设计过程中使用 iterative evaluations 的话这个模型是比较有用的.

2. *Visualizing and Understanding Convolutional Networks* 由于 CNN 本身就有`可视化`的特性，本文提出的 deconvnet 相当于剖析 CNN 中使得节点激活最大的有代表性的图，来发现其中的规律，并依此来改进网络架构. 这篇应该是最近 VIS 一些对网络本身做可视化文章的基础.

3. CHI14 *NewsViews: An automated pipeline for creating custom geovisualizations for news* 文章利用文本挖掘技术提取信息、再检索相关信息、对用户做推荐、标注，考虑保持信息的相关性、利用指标评估 visual saliency. 是一个很不错很复杂的 pipeline，但奇怪的是网上找不到一些实际的 app

4. CHI16 *Telling Stories about Dynamic Networks with Graph Comics* 将图的动态演变以传统的格子漫画形式展现. 有个小缺点是可能 node 太多就不好用，但也许可以通过 focus+context 来调整? 文中所有内容都是手画的，但是文中也系统提出了 Graph comic 设计准则. 这个东西艺术性很强，不像是 storyline，可以用计算机方法自动做 layout. 但也许可以借鉴一些思路、或者提取他们一个子集来做一些自动化的设计.

5. PVis17 *ChartAccent: Annotation for Data-Driven Storytelling* 本文专做 chart 的 annotation，有一套自己的设计流程，其对应的 annotation 的控制面板让人印象深刻，而且系统已经有了实体 https://chartaccent.github.io/. 也许对自己开发系统、提供对应交互也有不错的指导意义.